

WHAT IS CLAIMED IS:

1. A spark plug comprising:

a tubular housing;

a central electrode supported by said tubular housing in said
5 tubular housing with electrical insulation therebetween;

an earth electrode extending from one end of said tubular
housing;

a chip, arranged at an end surface of said earth electrode to
face said central electrode, for providing a spark gap between said
10 central electrode and said chip, said chip including a novel metal;
and

a fused junction layer between said earth electrode and said
chip including components of said chip and said earth electrode to
fix said chip to said earth electrode, wherein a cross-sectional area of
15 said chip at a tip thereof on the opposite side of said fused junction
layer is not less than 0.12 mm^2 and not more than 1.15 mm^2 , and a
length from said end surface to a top surface of said tip is not less
than 0.3 mm^2 and not more than 1.5 mm^2 , and wherein said fused
junction layer has substantially a conical outer surface continuously
20 connecting a peripheral outer surface of said chip to said end surface
of said earth electrode with a radius on a sectional plane along an
axis of said chip

2. The spark plug as claimed in claim 1, wherein if it is assumed
25 that a maximum width of said chip on a sectional plane along said
axis is D and that said radius is R, $D/4 \leq R \leq 3D/4$.

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7. The spark plug as claimed in claim 3, wherein said fused junction

layer includes said component of said chip of not less than 35% by weight and not more than 80% by weight.

8. The spark plug as claimed in claim 5, wherein said fused junction
5 layer includes said component of said chip of not less than 35% by weight and not more than 80% by weight.

9. The method of producing a spark plug including a tubular housing, a central electrode supported by said tubular housing in
10 said tubular housing with electrical insulation therebetween, and an earth electrode extending from one end of said tubular housing, comprising the steps of:

placing said chip including a noble metal on a surface of a tip of said earth electrode with contact between an end surface of said
15 chip and said surface; and

welding said chip to said surface by applying a laser beam toward a corner made between said surface and a side surface neighboring said end surface of said chip at an inclined angle to said end surface and said side surface.

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